AMENDMENTS TO THE CLAIMS

A listing of all claims and their current status in accordance with 37 C.F.R. § 1.121(c) is provided below.

1. (Currently amended) A process for producing solid polymer particles, the process comprising:

polymerizing, in a loop reaction zone, at least one monomer to produce a fluid slurry comprising solid polymer particles in a liquid medium;

withdrawing substantially continuously a portion of the slurry, comprising withdrawn liquid medium and withdrawn solid polymer particles, as an intermediate product of the process;

passing the intermediate product through a heated conduit, producing a concentrated intermediate product and a vapor; and

separating the vapor from the concentrated intermediate product by centrifugal force in a cyclone~~;~~

~~passing the concentrated intermediate product to a receiving zone~~.

2. (Original) The process of claim 1 wherein at least about 90% of the vapor is separated from the concentrated intermediate product in the cyclone and passed to a filter zone.

3. (Original) The process of claim 1 wherein at least about 95% of the vapor is separated from the concentrated intermediate product in the cyclone and passed to a filter zone.

4. (Original) The process of claim 1 wherein at least about 99% of the vapor is separated from the concentrated intermediate product in the cyclone and passed to a filter zone.

5. (Original) The process of claim 1 wherein at least about 99.9% of the vapor is separated from the concentrated intermediate product in the cyclone and passed to a filter zone.

6. (Original) The process of claim 1 wherein at least about 99.99% of the vapor is separated from the concentrated intermediate product in the cyclone and passed to a filter zone.

7. (Original) The process of claim 1 further comprising:

passing the separated vapor from the cyclone to a filter; and

filtering fine polymer particles from the separated vapor.

8. (Original) The process of claim 1 wherein at least about 90% of the polymer solids in the intermediate product are separated from the withdrawn medium in the cyclone.

9. (Original) The process of claim 1 wherein at least about 95% of the polymer solids in the intermediate product are separated from the withdrawn medium in the cyclone.

10. (Original) The process of claim 1 wherein at least about 99% of the polymer solids in the intermediate product are separated from the withdrawn medium in the cyclone.

11. (Original) The process of claim 1 wherein at least about 99.9% of the polymer solids in the intermediate product are separated from the withdrawn medium in the cyclone.

12. (Original) The process of claim 1 wherein at least about 99.99% of the polymer solids in the intermediate product are separated from the withdrawn medium in the cyclone.

13. (Original) The process of claim 1 wherein at least about 99.999% of the polymer solids in the intermediate product are separated from the withdrawn medium in the cyclone.

14. (Cancelled)

15. (Original) The process of claim 1, further comprising the step of maintaining a concentration of solid polymer particles in the slurry in the zone of greater than 40 weight percent.

16. (Original) The process of claim 1, wherein the separated vaporized diluent from the cyclone is condensed without compression by heat exchange with a fluid having temperature within the range of about 32 degrees F to about 200 degrees F.

17. (Currently amended) The process of claim 1, comprising passing the concentrated intermediate product to a receiving zone, wherein the volume of the receiving zone is in the range of about 1000 to about 20,000 cubic feet.

18. (Currently amended) The process of claim 1, ~~further~~ comprising:

passing the concentrated intermediate product to a receiving zone; and

~~the step of~~ holding the polymer solids in the receiving zone for a polymer solids residence time sufficient to remove substantially all the unentrained diluent.

19. (Currently amended) A process according to claim ~~21~~ 18 wherein the polymer solids residence time is from about 10 seconds to about 30 minutes.

20. (Currently amended) A process according to claim ~~21~~ 18 wherein the polymer solids residence time is from about 30 to about 120 minutes.

21 – 27. (cancelled).

28. (new) A process, comprising:

polymerizing at least one monomer in a reactor to produce a slurry comprising solid polymer particles and a liquid;

withdrawing substantially continuously via a valve a discharge slurry from the reactor, the discharge slurry comprising withdrawn solid polymer particles and withdrawn liquid, wherein the discharge slurry has a solids concentration greater than the solids concentration of the slurry in the reactor;

modulating the valve to adjust a flow rate of the discharge slurry to facilitate control of a pressure in the reactor;

passing the discharge slurry from the reactor through a heated conduit to vaporize at least a majority of the liquid in the discharge slurry; and

separating vapor from the heated discharge slurry via centrifugal forces.

29. (new) The process of claim 28, wherein separating vapor comprises passing the heated discharge slurry through a cyclone.

30. (new) The process of claim 29, comprising discharging the separated vapor from a top portion of the cyclone.

31. (new) The process of claim 29, comprising discharging a polymer stream comprising solid polymer particles and residual hydrocarbon from a bottom portion of the cyclone.

32. (new) The process of claim 31, comprising passing the polymer stream from the bottom portion of the cyclone to a purge column.

33. (new) The process of claim 31, comprising passing the polymer stream from the bottom portion of the cyclone to a low-pressure flash tank.

34. (new) The process of claim 31, comprising passing the polymer stream from the bottom portion of the cyclone to a fluff chamber.

35. (new) The process of claim 34, comprising passing the polymer stream from the fluff chamber to a purge column.